# COMPARATIVE BIOCHEMISTRY AND PHYSIOLOGY

An International Journal

EDITORS: P. W. HOCHACHKA and T. P. MOMMSEN

**REVIEW EDITOR: P. J. WALSH** 

Volume Contents, Subject, and Author Index

Volume 130, Part B, 2001



Amsterdam — London — New York — Oxford — Paris — Shannon — Tokyo

\_\_\_\_\_

# COMPARATIVE BIOCHEMISTRY AND PHYSIOLOGY

## Aims and scope of Comparative Biochemistry and Physiology

The Journal publishes original articles emphasizing comparative and environmental aspects of the physiology, biochemistry, molecular biology, pharmacology, toxicology and endocrinology of animals. Adaptation and evolution as organizing principles are encouraged. Studies on other organisms will be considered if approached in a comparative context.

Part A. Molecular and Integrative Physiology. This section deals with molecular, cellular, integrative, and ecological physiology. Topics include bioenergetics, circulation, development, excretion, ion regulation, endocrinology, neurobiology, nutrition, respiration, and thermal biology. Study on regulatory mechanisms at any level of organization such as signal transduction and cellular interactions and control of behaviour are encouraged.

Part B. Biochemistry and Molecular Biology. This section covers biochemical and molecular biological aspects of metabolism, enzymology, regulation, nutrition, signal transduction, promoters, gene structure and regulation, metabolite and cell constituents, macromolecular structures, adaptational mechanisms and evolutionary principles.

Part C. Toxicology and Pharmacology. This section is concerned with chemical and drug action at different levels of organization, biotransformation of xenobiotics, mechanisms of toxicity, including reactive oxygen species and carcinogenesis, endocrine disruptors, natural products chemistry, and signal transduction. A molecular approach to these fields is encouraged.

# **EDITORS** -

#### P. W. Hochachka & T. P. Mommsen

CBP Editorial Office, University of British Columbia, 1153-2111 Lower Mall, Vancouver BC, Canada V6T 1Z4, Tel.: +1 604 827-

Managing Editor: Leslie Lightheart (Tel.: +1 604 827-4100; Fax: +1 604 827-4101). E-mail: cbpjrnl@interchange.ubc.ca

# REVIEW EDITOR

#### P. J. Walsh

NIEHS Marine and Freshwater Biomedical Science Center, Rosenstiel School of Marine and Atmospheric Science, University of Miami, 4600 Rickenbacker Causeway, Miami, FL 33149-4617, U.S.A. Tel.: +1 305 361-4617; Fax: +1 305 361-4600; E-mail: pwalsh@rsmas.miami.edu

# ASSOCIATE EDITORS -

D. J. van der Horst Utrecht, The Netherlands

David R. Jones Vancouver, BC, Canada

Kiyoaki Kuwasawa Tokyo, Japan

Mikko J. Nikinmaa Turku, Finland

L. M. Riddiford Seattle, WA, U.S.A.

John J. Stegeman Woods Hole, MA, U.S.A. Yoshio Takei Tokyo, Japan

Michael C. Thorndyke Egham, U.K.

A. Viarengo Allessandria, Italy

# **EDITORIAL BOARD MEMBERS** -

V. M. F. de Almeida e Val Manaus, Brazil

J. Baldwin

Clayton, Australia

R. V. Baudinette

Adelaide, Australia

S. Bhattacharya

Calcutta, India

J. H. Brackenbury

Cambridge, U.K.

P. J. Butler

Birmingham, U.K.

A. R. Cossins

Liverpool, U.K.

P. S. Davie

Palmerston North, New Zealand

F. De Pablo

Madrid, Spain

W. R. Ellington

Tallahassee, FL, U.S.A.

E. Fabbri

Bologna, Italy

G. Flik

Nijmegen, The Netherlands

L. Förlin

Göteborg, Sweden

R. Fujii

Chiba, Japan

G. Gäde

Rondebosch, South Africa

R. P. Henry

Auburn, AL, U.S.A.

J. W. Hicks

Irvine, CA, U.S.A.

M. Kobayashi

Hiroshima, Japan

M. Krauskopf Santiago, Chile

D. T. Manahan

Los Angeles, CA, U.S.A.

A. Meyer

Konstanz, Germany

S. Morris Bristol UK

T. Motokawa

Tokyo, Japan

Y.V. Natochin

St. Petersburg, Russia

A. Péqueux Liège, Belgium

S. K. Pierce, Jr

Tampa, FL, U.S.A.

J. C. Rankin

Odense, Denmark

K. L. Shephard Southampton, U.K.

N. B. Terwilliger Charleston, OR, U.S.A.

F. Tokunaga

Osaka, Japan

J.-P. Truchot Talence, France

G. van den Thillart Leiden. The Netherlands

M. Ugrumov

Moscow, Russia C. M. Wood

Hamilton, Canada P. A. Wright

Guelph, Canada

T. Yamaguchi Okayama, Japan

T. Yoshizawa Osaka, Japan

J. Chen, H. Ferris, K.M. Scow and K.J. Graham



# **CONTENTS OF VOLUME 130**

Vol. 130B, No. 1

#### Review article P.Y Rescan Regulation and functions of myogenic regulatory factors in lower vertebrates General papers K.A. Moutou, S. Socorro, D.M. Power, Z. Mamuris, 13 Molecular cloning and sequence of gilthead sea bream (Sparus aurata) a-skeletal and A.V.M. Canario actin: tissue and developmental expression E. Karna, W. Miltyk, S. Wolcyński and J.A. Palka The potential mechanism for glutamine-induced collagen biosynthesis in cultured 23 human skin fibroblasts J. Kaewsrithong, H. Ushio and T. Ohshima Seasonal variation of phosphatidylcholine hydroperoxides in blood of 33 sweet smelt Plecoglossus altivelis C.M. Melton, G.M. Zaunbrecher, G. Yoshizaki, Expression of connexin 43 mRNA and protein in developing follicles of prepubertal 43 R. Patiño, S. Whisnant, A. Rendon and V.H. Lee porcine ovaries R. Stradi, E. Pini and G. Celentano 57 The chemical structure of the pigments in Ara macao plumage J-H. Yuan and R.E. Austic 65 Characterization of hepatic L-threonin dehydrogenase of chicken T. Horii, J. Kitaura, K. Wada and M. Nishida Genetic relationship among Japanese sentinel crabs (Decapoda: Ocypodidae: genus: Macrophthalmus) I. Seiliez, S. Panserat, S. Kaushik and P. Bergot 83 Cloning, tissue distribution and nutritional regulation of a $\Delta 6$ -desaturase-like enzyme in rainbow trout X. Wen, L. Chen, C. Ai, Z. Zhou and H. Jiang 95 Variation in lipid composition of Chinese mitten-handed crab. Eriocheir sinensis during ovarian maturation F.J. Lozeman, C.K. Middleton, J. Devg, E.C. Kazala, 105 Characterization of microsomal diacylglycerol acyltransferase activity from C. Verhaege, P.S. Mir, A. Laroche, D.R.C. Bailey and bovine adipose and muscle tissue R.J. Weselake H. Kishimura, H. Saeki and K Hayashi Isolation and characteristics of trypsin inhibitor from the hepatopancreas of a squid (Todarodes pacificus) Instructions to Authors Vol. 130B, No. 2 **Editorials** P.W. Hochachka, T.P. Mommsen and P.J. Walsh Knowledge explosion in comparative physiology and biochemistry: Its causes and its future L.W. Clem, K. Söderhäll and G. Warr 127 Editorial R.W. Chapman EcoGenomics - a consilience for comparative immunology? R.W. Chapman and J. Almeida 133 Response to the Editors General papers

135 Fatty acid composition and dynamics of selected fungal-feeding nematodes and fungi

#### Contents of volume

High density lipoprotein cholesteryl ester metabolism in the pony, an animal species S.N.J. Geelen, A.G. Lemmens, A.H.M. Terpstra, without plasma cholesteryl ester transfer protein activity: transfer of high density lipopro Th. Wensing and A.C. Beynen tein cholesteryl esters to lower density lipoproteins and the effect of the amount of fat in the diet C.T. Souza, M.B. Moura, A. Magalhaes, Inhibition of mutalysin II, a metalloproteinase from bushmaster snake venom by human L.G.D. Heneine, C.C. Olortegui, C.R. Diniz α2-macroglobulin and rabbit immunoglobulin and E.F. Sanchez B.J. Wooldridge, G. Pineda, J.J. Banuelas-Ornelas, 169 Mojave rattlesnakes (Crotalus scutulatus scutulatus) lacking the acidic subunit DNA R.K. Dagda, S.E. Gasanov, E.D. Rael and C.S. Leib sequence lack Mojave toxin in their venom M. Matsui, K. Nishikawa, S. Tanabe and Y. Misawa 181 Systematic status of Hynobius tokyoensis (Amphibia: Urodela) from Aichi Prefecture, Japan: a biochemical survey K. Wakimoto, M. Kuro-o, N. Yanaka, I. Komuro Expression of Na<sup>+</sup>/Ca<sup>2+</sup> exchanger (NCX1) gene in the developmental mouse embryo and Y.-i. Nabeshima and Y. Imai adult mouse brain M.C. Ordás, B. Novoa, M. Faisal, S. McLaughlin Proteolytic activity of cultured Pseudoperkinsus tapetis extracellular products 199 and A. Figueras K. Okamoto, M. Sakai and M. Miyata 207 Molecular cloning and sequence analysis of  $\alpha$ - and  $\beta$ -globin cDNAs from yellowtail, Seriola quinqueradiata C. Banerjee and D. Sarkar 217 The cAMP-binding proteins of Leishmania are not the regulatory subunits of cAMPdependent protein kinase A. Mossab, S. Guillaumin, M. Lessire, F. Milliat Plasma lipoprotein distribution in the turkey (Meleagris gallopavo) and D. Hermier The hepatic extraction of plasma free amino acids and response to hepatic portal venous Z. Song, K. Beers, J.J. Dibner, M. Vázquez-Añón, 237 R. McNew and W. Bottje infusion of methionine sources in anesthetized SCWL males (Gallus domesticus) Distribution of tyrosine aminotransferase activity in mink (Mustela vison) D.J. Prieur, J.R. Gorham and R.K. Wood 251 D.R. Tocher, J.G. Bell, P. MacGlaughlin, Hepatocyte fatty acid desaturation and polyunsaturated fatty acid composition of liver in F. McGhee and J.R. Dick salmonids: effects of dietary vegetable oil 271 P1, a high mobility group-like protein is depressed in human breast adenocarcinoma A. Photopoulou, T. Patargias and V. Aleporou-Marinou Erratum A. do Carmo Zerbo, R.L.M. Silva de Moraes Erratum to: "Protein requirements in larvae and adults of Scaptotrigona postica and M.R. Brochetto-Braga (Hymenoptera: Apidae, Meliponinae): midgut proteolytic activity and pollen digestion" Instructions to Authors

# Vol. 130B, No. 3

#### Review

S.R. Stürzenbaum and P. Kille 281 Control genes in quantitative molecular biological techniques: the variability of invariance

## General papers

J.P. Infante, R.C. Kirwan and J.T. Brenna

frequency contraction muscles of hummingbirds and rattlesnakes

W.K.C. Weebadda, G.J. Hoover, D.B. Hunter and M.A. Hayes 299 Avian air sac and plasma proteins that bind surface polysaccharides of Escherichia coli O2

High levels of docosahexaenoic acid (22:6n-3)-containing phospholipids in high-

M. Saito and K. Sugiyama

313 Major and c-series gangliosides in lenticular tissues: mammals to molluscs

		Contents of volume
F. Sunny and O.V. Oommen	323	Rapid action of glucocorticoids on branchial ATPase activity in <i>Oreochromis mossambic cus</i> : an in vivo and in vitro study
A.V. Fernández Gimenez, F.L. García-Carreño, M.A. Navarrete del Toro and J.L. Fenucci	331	Digestive proteinases of red shrimp Pleoticus muelleri (Decapoda, Penaeoidea): partial characterization and relationship with molting
R.M.G. Wells, J. Lu, A.J.R. Hickey and A.G. Jeffs	339	Ontogenetic changes in enzyme activities associated with energy production in the spiny lobster, Jasus edwardsii
M. Tissot, D.R. Nelson and D.M. Gordon	349	Qualitative and quantitative differences in cuticular hydrocarbons between laboratory and field colonies of <i>Pogonomyrmex barbatus</i>
M. Ishizawa, T. Ishizuka, K. Kajita, A. Miura, Y. Kanoh, M. Kimura and K. Yasuda	359	Dehydroepiandrosterone (DHEA) stimulates glucose uptake in rat adipocytes: activation of phospholipase D
V. Kostál, M. Slachta and P. Simek	365	Cryoprotective role of polyols independent of the increase in supercooling capacity in diapausing adults of <i>Pyrrhocoris apterus</i> (Heteroptera: Insecta)
Y. Goso, K. Ishihara, S. Sugawara and K. Hotta	375	Purification and characterization of α-L-fucosidases from Streptomyces sp. OH11242
J.M. Rotchell, B. Scoggins, J.B. Blair and G.K. Ostrander	385	Isolation and characterization of the retinoblastoma protein from fish
YS. Xu and H. Kawasaki	393	Isolation and expression of cathepsin B cDNA in hemocytes during metamorphosis of Bombyx mori
T. Ide, M. Kushiro and Y. Takahashi	401	Dietary mold oil rich in gamma linolenic acid increases insulin-dependent glucose utilization in isolated rat adipocytes
A. Kashiwagi, T. Kanno, K. Arita, R. Ishisaka, T. Utsumi and K. Utsumi	411	Suppression of $T_{3^{\!-}}$ and fatty acid-induced membrane permeability transition by i L-carntine
E.L. Crockett, B.E. Dougherty and A.N. McNamer	419	Effects of acclimation temperature on enzymatic capacities and mitochondrial membranes from the body wall of the earthworm <i>Lumbricus terrestris</i>
M. Mita, M. Yoshikuni, Y. Nagahama, M. Maekawa, M. Saito and M. Saneyoshi	427	Interaction of NI-substituted adenines with 1-methyladenine receptors of starfish oocytes in induction of maturation
	1	Instructions to Authors
		Vol. 130B, No. 4
Review		
P.W. Hochachka and P.L. Lutz	435	Mechanism, origin and evolution of anoxia tolerance in animals
General papers		
V. Chandhoke, M. Southall, R. Holt and J.M. Flinn	461	Dopamine receptor subtype density as a function of age in Aplysia californica
S.L. Hsieh, W.L. Liao and C.M Kuo chanos	467	Molecular cloning and sequence analysis of stearoyl-CoA desaturase in milkfish, Chanos
R.L. Cox, T. Mariano, D.E. Heck, J.D. Laskin and Stegeman	479	Nitric oxide synthase sequences in the marine fish Stenotomus chrysops and the sea J.J. urchin Arbacia punctulata and phylogenetic analysis of nitric oxide synthase calmodulin-binding domains
K. Shibata, A. Tarui, N. Todoroki, S. Kawamoto, S. Takahashi, Y. Kera and R-h. Yamada	493	Occurrence of $N$ methyl-L-aspartate in bivalves and its distribution compared with that of $N$ methyl-b-aspartate and 0.L-aspartate
M.A. Ibrahim, AH.M. Ghazy, T.M. Maharem and M.I. Khalil	501	Factor Xa (FXa) inhibitor from the nymphs of the camel tick Hyalomma dromedarii
J. Jeong, T. Toida, Y. Muneta, I. Kosiishi, T. Imanari, R.J. Linhardt, H.S. Choi, S.J. Wu and Y.S. Kim	513	Localization and characterization of acharan sulfate in the body of the giant African snail Achatina fulica
B. Sun, P. Xu, W. Wang and P.M. Salvaterra	521	In vivo modification of Na*, K*-ATPase activity in Drosophila

#### Contents of volume

J.E. Steele, K. Garcha and D. Sun Inositol triphosphate mediates the action of hypertrehalosemic hormone on fat body of the American cockroach, Periplaneta americana A. Watanabe, I. Uchida, K. Nakata, Y. Fujimoto and 547 Molecular cloning of bovine (Bos taurus) cDNA encoding a 94-kDa glucose-regulated protein and developmental changes in its mRNA and protein content in the mammary D. Fedeli, L. Tiano, R. Gabbianelli, G.C. Caulini, 559 Hemoglobin components from trout (Salmo irideus): determination of their peroxidative M. Wozniak and G. Falcioni activity K.J. Cowan and K.B. Storey 565 Protein kinase and phosphatase responses to anoxia in crayfish, Orconectes virilis: purifica tion and characterization of cAMP-dependent protein kinase C.C. Loa, M.K. Hsieh, C.C. Wu and T.L. Lin 579 Molecular identification and characterization of turkey IFN-y gene S.Natesan and S.R.R. Reddy 585 Compensatory changes in enzymes of arginine metabolism during renal hypertrophy in Erratum Md. Saydur Rahman, A. Takemura and K. Takano Erratum to "Lunar synchronization of testicular development and steroidogenesis in rabbitfish" [Comp. Biochem. Physiol. B. 129 (2001) 367-373] Ш Contents of Vol.130 VII Subject index X Author index XII Instructions to Authors

